

REMARKS

In the Office Action, claims 1, 4-10, 12-15 and 17-21 were rejected and objection was made to claim 10. By the present response, claims 1, 10, 15, 20 and 21 are amended and claims 6, 7, 13, 14, 18 and 19 are canceled. Upon entry of the amendments, claims 1, 4, 5, 8-10, 12, 15, 17, 20 and 21 will be pending in the application. Reconsideration and allowance of all pending claims are requested.

Claim Objections

In the Office Action, the Examiner objected to claim 10 because of the following informalities: "the monitored temperature" lacked proper antecedent basis. Applicants have amended claim 10 accordingly by the present response. Reconsideration and approval are requested.

Rejections Under 35 U.S.C. § 103

Claims 1, 4-10, 12-15 and 17-21 were rejected under 35 U.S.C. § 103 (a) as being unpatentable over Carkner (U.S. Patent No. 6,160,383, hereinafter "Carkner") in view of Helmig et al. (U.S. Patent Application Publication No. 2001/0022804, hereinafter "Helmig").

By the present response, the recitations of claim 7 has been incorporated into claim 1, and the recitations of claim 19 has been incorporated into claim 15.

Carkner and Helmig cannot be fairly combined

Carkner teaches an *indirect* contact battery temperature detection for a rechargeable battery system. The reference discloses a recharging operation performed by a recharging circuit that is controlled by a temperature measuring system, which is both electrically and thermally coupled to a contact engaging a terminal of the rechargeable battery. The temperature measuring system includes a contact temperature sensor and a determination circuit for the sensor. The system also includes an ambient temperature

sensor, a determination circuit for that sensor, a processing unit and a threshold value unit. The determination circuits output first and second signals to the processing unit. The processing unit determines a difference value between these signals and compares the difference value to a threshold value from the threshold value unit. Based on this comparison, the processing unit sends control signals to the recharging circuit to control the recharging operation.

Helmig discloses a fiber optic temperature sensor capable of on-line monitoring of energy-producing or energy-consuming devices. It also discloses a method of measuring temperatures with optical fibers utilizing a fiber Bragg grating. The fiber optic temperature sensor is mounted in an electrical apparatus such as a power transformer or a battery.

The references cannot be combined in the way that the Examiner suggests, because since Helmig teaches optical sensing wherein the fiber optic sensor (presumably in contact with a battery), whereas Carkner teaches *indirect* sensing with the types of batteries disclosed. Carkner specifies, in col. 1, lines 7-10:

More specifically, the present invention relates to a battery recharging system and method using an indirect contact battery temperature sensor, where the system is part of an electronic device, such as a two-way wireless communication device, cellular telephones, pagers, etc.

Also, as recited in col. 1, lines 35-40 of Carkner:

In products that accept AA size (IEC LR6) rechargeable batteries, the ability to place a temperature sensor against the battery is limited since the battery diameters vary and a temperature sensor placed on the wall of the battery compartment does not always contact the battery adequately for thermal conduction.

For such type of batteries, it is completely unworkable to place an optical sensor inside the battery to detect temperature.

In addition, Carkner discloses a temperature sensor that is thermally coupled to first and second contacts connected to terminals of a battery. As set forth in col. 2, lines 48-58 of Carkner:

The apparatus 10 includes a printed-circuit-board 12 and a battery compartment section 14 where a battery 16 is held and into which first and second contact structures 18 and 20 extend to engage opposite terminals of the rechargeable battery 16. In accordance with the present invention, there is a contact temperature sensor 22 which is thermally coupled to the first contact 18. Although the temperature sensor 22 is shown thermally coupled to the first contact 18. Although the temperature sensor 22 is shown thermally coupled to the first contact 18, in alternative embodiments, the temperature sensor 22 may instead be thermally coupled to the second contact 20.

Therefore, Carkner cannot be combined with Helmig to detect internal battery temperature via a sensor disposed inside a battery, as claimed.

Improper Combination - Lack of Objective Evidence of Reasons to Combine

In addition, the Examiner has not shown the requisite motivation or suggestion to modify or combine the cited references to reach the present claims. The Examiner must provide objective evidence, rather than subjective belief and unknown authority, of the requisite motivation or suggestion to combine or modify the cited references. *In re Lee*, 61 U.S.P.Q.2d. 1430 (Fed. Cir. 2002). As recited in M.P.E.P. § 2143.01:

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit

showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also *In re Lee*, 277 F.3d 1338, 1342-44, 61 USPQ2d 1430, 1433-34 (Fed. Cir. 2002) (discussing the importance of relying on objective evidence and making specific factual findings with respect to the motivation to combine references); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In the present rejection, the Examiner combined the cited references based on the *conclusory and subjective statement* that "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the optical sensor of Helmig et al. for a battery temperature detection circuit of Carkner since Carkner suggest utilization of an optical sensor and for the purpose of providing a high speed communications between the sensor and the corresponding circuitry to optimize battery charging operations." Office Action, section 8, page 3.

Accordingly, Applicants request the Examiner to produce or demonstrate by *objective evidence* the requisite motivation or suggestion to combine the cited references, or remove the foregoing rejection under 35 U.S.C. § 103.

Improper Combination - Lack of Reasonable Expectation Of Success

The Examiner does not show a reasonable expectation of success in combining the references. As recited in M.P.E.P § 2143.02:

The prior art can be modified or combined to reject claims as *prima facie* obvious as long as there is a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

As the cited references actually teach away from each other as explained above, or at the very least, teach techniques that cannot be physically and practically combined, they are not properly combinable. Hence, the Examiner has not shown any reasonable

expectation of success. For these reasons, Applicants respectfully request withdrawal of the foregoing combination the corresponding rejections under 35 U.S.C. § 103.

Conclusion

In conclusion, the Examiner has not established a *prima facie* case of obviousness. Applicants therefore request withdrawal of the amendments and allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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